LETTERS TO THE EDITOR

Austin Airport Terminal Bridge

Being a frequent air traveler, I am always entering or departing airport terminals. My general impression is that most elevated bridges and ramps leading to terminals look heavy and unattractive. It is refreshing to see the new slender and light looking elevated terminal bridge for the Austin International Airport. The authors should be commended for persuading the airport officials to adopt the trapezoidal U-shaped beams developed by Mary Lou Ralls and her team of engineers for the Texas Department of Transportation. This excellent article, "Precast Concrete Alternate Provides Unique Solution for Airport Terminal Bridge" (March-April PCI JOURNAL) shows that with some imagination these U-beam sections can be used effectively not only for bridges on open highways but also for structures in urban areas.

Glen Abrams
New York City, New York

Breakwater/Pier Structure for U. S. Navy

As the Romans found out two millennia ago with their discovery of Pozzolan (volcanic fly ash), concrete is a wonderful material for building structures in aggressive marine environments. Today, with the availability of high performance concrete, together with prestressing, precast/prestressed concrete is not only the most ideal material but also the only practical and economical way to build sea structures. The authors are to be commended for documenting the project in their excellent article, "Design-Construction of a Breakwater/Pier Structure at U.S. Naval Station Everett" (March-April PCI JOURNAL). This project can serve as a model for breakwater/berthing facilities worldwide.

John Brown
San Diego, California

PCI COMMITTEE DAYS

Once again, Committee Days was a huge success with 260 members and guests participating in 35 technical and marketing committee meetings over a four-day period at the Holiday Inn Mart Plaza in Chicago, Illinois, April 13-16. The most heavily attended committees continue to be Bridges, Connection Details, Parking Structures, Research and Development, and Seismic. This time, how-

New Appointments to PCI Committees

The following individuals have recently accepted appointments to PCI committees. We appreciate their interest and voluntary participation.

- *Connection Details Committee*

  Fadjar I. Kusumo-Rahardjo
  Waukesha, Wisconsin

- *Industry Handbook Committee*

  Craig T. Barrett
  LEAP Associates International, Inc.
  Denver, Colorado

- *Parking Structures Committee*

  Peter G. Troiani
  The Consulting Engineers Group, Inc.
  Mt. Prospect, Illinois

- *Seismic Committee*

  Conrad Paulson
  Wiss, Janney, Elstner Associates, Inc.
  Chicago, Illinois

PRECAST/PRESTRESSED CONCRETE INSTITUTE
Chicago, Illinois

U.S. Department of Transportation
Federal Highway Administration
Washington, D.C.

fib fédération internationale du béton
CEB-FIP Lausanne, Switzerland

PCI/FHWA/FIB International Symposium on High Performance Concrete

The Precast/Prestressed Concrete Institute (PCI), the Federal Highway Administration (FHWA) and the Fédération Internationale du Béton (FIB) are co-sponsors of an International Symposium on High Performance Concrete to be held September 25-27, 2000, in conjunction with the 46th PCI Annual Convention and Exhibition in Orlando, Florida.

The PCI/FHWA/FIB International Symposium will address the research, design, construction, performance and benefits of High Performance Concrete (HPC). HPC is engineered to achieve enhanced durability and/or strength characteristics while ensuring adequate constructability. Associated technologies will also be covered.

Topics addressed at the Symposium will include:

General History, Marketing and Implementation — The history and definition of high performance concrete; modeling service life, life-cycle analysis, marketing and implementation of high performance concrete for bridges.

Materials and Mix Design — Material properties, mix design, use of admixtures, durability, placeability, and avoidance of delayed ettringite formation.

Laboratory Research and Future Direction — Research on mix properties, strength, durability, ductility, high performance grout, reactive powder concrete, and new materials including development, testing and application of FRP and other non-metallic corrosion-resistant reinforcements.

Quality Concepts, Fabrication and Transportation — Quality control, curing procedures, test methods, instrumentation, placement and use of quality systems to produce durable high strength concrete products, fabrication and testing of bridge girders, prestressing techniques, delivery to the job site and erection of prestressed concrete members.

Construction Techniques — Techniques, systems, methods or procedures that facilitate construction, including transportation and placement of high performance concrete.

Structural Design and Concepts — Design aspects of high performance concrete including optimization techniques for slab design layout and seismic behavior of high strength structural elements, repair, and rehabilitation.

Structural Performance and Code Requirements — Evaluation of structural performance in terms of creep, shrinkage, camber and other long-term behavioral characteristics. Current ACI and AASHTO Code provisions including limits and required changes relevant to high strength concrete.

FHWA Showcase Projects and Case Histories — Overviews and summaries of the demonstration projects sponsored by FHWA and various state departments of transportation, including follow-up reports on their performance. Highlights from projects that have incorporated high performance concrete including problems and limitations.

Update on Papers

Seventy-five papers on innovation, recent trends, research and new developments in concrete design, construction, materials and quality control and assurance are being reviewed by the Symposium Technical and High Performance Concrete Committees, and other selected reviewers for presentation at various sessions and inclusion in the Symposium Proceedings.

For more information, contact Paul Johal at PCI, 209 W. Jackson Boulevard, Suite 500, Chicago, Illinois 60606. Tel.: (312) 786-0300; fax: (312) 786-0353; e-mail: info@pci.org; web site: www.pci.org.

Cooperating Organizations

American Concrete Institute
American Segmental Bridge Institute
American Society of Civil Engineers
American Society for Concrete Contractors
American Society for Testing and Materials
Asociacion Nacional de Industriales del Presfuerzo y la Prefabricacion, A.C.
Canadian Prestressed Concrete Institute
Concrete Reinforcing Steel Institute
Expanded Shale, Clay and Slate Institute
Instituto Mexicano del Cemento y del Concreto, A.C.
International Center for Sustainable Development of Cement and Concrete
National Ready Mixed Concrete Association
National Stone Association
Portland Cement Association
Post-Tensioning Institute
SPI Composites Institute
Silica Fume Association, Inc.
Wire Reinforcement Institute

ever, much interest was shown in Student Education, which provides the seeds for future industry growth.

The following are summaries of some of the major activities of the committees:

1. Bridges (**Roy Eriksson**, chairman) — Some 60 persons were in attendance including 12 state DOT engineers. A wide range of topics were discussed including:
   - Deck girder composite action with precast deck panels with CIP topping.
   - Constructability of the connection between simple span precast concrete girders made continuous.
   - Case study: Three-piece single span (206 ft) spliced girder design using NU2000 section.
   - Assessment of pretensioned girder end zones using strut-and-tie model.
2. Connection Details (**Jagdish Nijhawan**, chairman) — Substantial progress is being made in developing the chapters for the new Connections Design Manual.
3. Erectors (**Gregory B. Gibbons**, chairman) — Three reports on proper erection procedures for Litewalls have been developed and submitted to the Technical Activities Committee for review:
   - "Recommended Practices and Procedures for the Erection of Vertical Litewalls and Pocketed Spandrels"
   - "Recommended Practices and Procedures for the Erection of Vertical Litewalls with Haunched Spandrels"
   - "Recommended Practices and Procedures for the Erection of Horizontal Litewalls with Pocketed or Haunched Spandrels"
4. Industry Handbook (**Kim Seeber**, chairman) — Assignments have been made in revising and expanding the chapters for the next edition of the PCI Design Handbook. Particular attention will be given to seismic issues.
5. Professional Member (**Donald C. Raths**, chairman) — Several new initiatives have been developed to strengthen the value of PCI Professional Membership.

Burns Receives Distinguished Educator Award

Ned H. Burns, Zarrow Centennial Professor of Civil Engineering at the University of Texas at Austin, Austin, Texas, will be conferred with the PCI Distinguished Educator Award for 2000 at the PCI Annual Convention and PCI/FHWA/FIB International Symposium on High Performance Concrete in September. The award, developed by the Student Education Committee, recognizes distinguished educators in the fields of engineering, architecture and construction technology who have made significant contributions to the precast, prestressed concrete industry.

A fellow of PCI, ACI and ASCE, Dr. Burns is the author of more than 50 technical papers and reports, many of which have been published in the PCI JOURNAL. He has won numerous awards including the Martin P. Korn Award (1993) and T.Y. Lin Award (1994) and is co-author (with T.Y. Lin) of the popular book on *Design of Prestressed Concrete Structures*. The University of Texas has honored him with teaching awards from General Dynamics, Amoco and the Zarrow Centennial Professorship. Recently, Dr. Burns was elected to the prestigious National Academy of Engineering for "important contributions to engineering theory and practice." Currently, he is a member of the PCI Bridges and Prestressing Steel Committees.

6. Seismic (**Ned M. Cleland**, chairman) — Specific chapters have been identified on a proposed new manual for the Seismic Design of Precast/Prestressed Concrete Structures.

R&D COMMITTEE NEWS

Daniel P. Jenny Research Fellowships Awarded for 2000-2001

Earlier this year, PCI solicited proposals for Daniel P. Jenny Research Fellowships from the civil engineering departments of universities in the United States and Canada. Out of 16 high quality proposals received on topics pertinent to PCI's interests, the R&D Committee (**Thomas J. D'Arcy**, chairman) selected four fellowships at the PCI Committee Days meeting in Chicago in April.

The selection process was based on the timeliness of the proposed research and its potential benefit to the precast/prestressed concrete industry as well as on the research capabilities of the investigator and additional industry support available from producers or state associations. The following four fellowships have been approved for an award of $10,000 each:

- "Preliminary Study of Precast Concrete in the Construction of Tornado Shelters," at Clemson University, Clemson, South Carolina. The research will be conducted by **David Impson** under the direction of **Professor Scott Schiff**. The study will include the design of tornado shelters using precast concrete, design of fasteners and anchoring devices, and the development of methods for easy incorporation of shelters into the construction of traditional wood frame houses.

Additional support in terms of materials and technical assistance will be provided by the Tindall Corporation, Conley, Georgia.

The all-precast concrete parking structure, part of Exeter Hospital, Exeter, New Hampshire, features precast concrete double tees, columns, beams, wall panels and spandrels from Strescon Limited, Saint John, New Brunswick, Canada. The designers wanted the parking structure to blend in with the surrounding brick buildings on the Exeter Hospital campus. The brick used on this parking structure was applied to the precast concrete wall panels at the Strescon factory before the wall panels were shipped to the job site.

- "Post-Tensioning the Inverted Tee Bridge System for Increased Span-to-Depth Ratio and Improved Durability," at Kansas State University, Manhattan, Kansas. This study will be conducted by **Calvin Reed** under the supervision of **Professor Robert Peterman**. The researchers will perform a comparative design analysis for the basic IT System and the PT-IT System to determine the reduction in structural depth for a given span, and increase in span length for a given structural depth using the PT-IT System.
  Additional support in terms of funding, test specimens and technical guidance will be provided by the Kansas Department of Transportation; Kansas Prestressed Concrete Association, Marshall, Missouri; VSL, Ralph Whitehead Associates, Inc., and Wilson Concrete Company, Kansas City, Kansas.
- "Analytical Assessment of Seismic Demands in Untopped Diaphragm Shear Connectors," at the University of Illinois, Urbana, Illinois. The study will be carried out under the guidance of **Professors Mark Aschheim**, **Dan Kuchma** and **Neil Hawkins**. The objective is to address the ductility, deformation and strength demands experienced by the connectors, and the contribution of each connector to the strength of the diaphragm and limitations on the spacing of connectors.
  The National Science Foundation will provide one-to-one matching support as part of a Career Award entitled, "Advancing the Performance Based Seismic Design of Buildings," which will be active for four years beginning October 2000.

- "Development of High-Performance, Self-Consolidating Concrete for Precast and Prestressed Applications," at the University of Sherbrooke, Sherbrooke, Quebec, Canada. The research will be conducted by **Rock Blouin** under the direction of **Professor Kamal Khayat**. The primary objectives are the development of air-entrained HPC self-consolidating concrete, characterization of plastic and hardened properties and durability, and evaluation of key parameters affecting the surface quality of precast concrete.

  Additional support in terms of funding, materials and technical assistance will be provided by the Quebec Research Funding Agency (FCAR); University of Sherbrooke, Sherbrooke, Quebec, Canada; RIC Construction, Inc.; and Hyprescon, Inc.

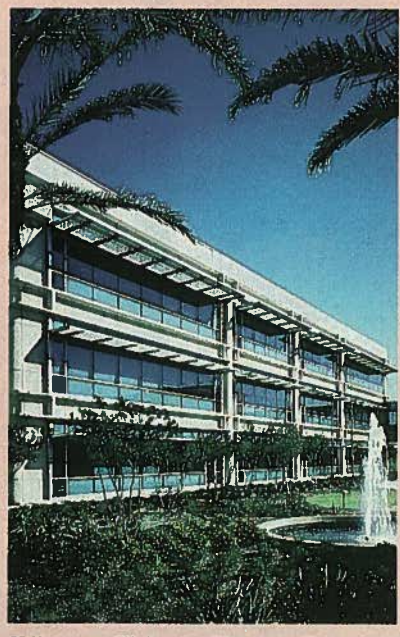
The PCI Research Fellowship program was established in 1972 to support graduate students in civil engineering interested in research related to precast and prestressed concrete. Fellowships generally conclude with an MS degree thesis and a summary paper published in the PCI JOURNAL. For further information on the Daniel P. Jenny Research Fellowship program, contact PCI's Research Director, **Paul Johal**.

Schuylkill Products Supplies Precast Wall Panels for Prison

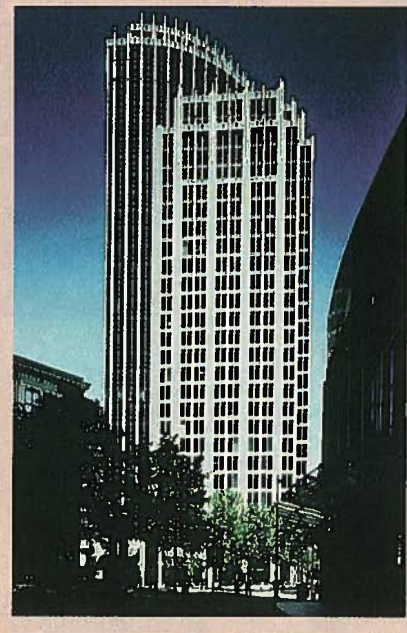
The U. S. Penitentiary under construction in Canaan, Wayne County, Pennsylvania, will feature a variety of precast, prestressed concrete products supplied by Schuylkill Products, Inc., Cressona, Pennsylvania. Schuylkill is provid-

Architectural Precast Association Announces Award Winners

Three PCI Producer Members win 2000 APA Awards for Design & Manufacturing at the prestigious annual competition which recognizes projects of outstanding design and production work utilizing architectural precast concrete.



Winner: Citicorp Tampa Campus, Tampa, Florida
Designer: HKS Architects, Inc., Dallas, Texas
Precast Concrete Producer: Gate Precast Company, Monroeville, Alabama



Winner: IJL Financial Center, Charlotte, North Carolina
Designer: Smallwood, Reynolds, Stewart & Stewart, Atlanta, Georgia
Precast Concrete Producer: Metromont Prestress Company, Charlotte, North Carolina

Winner: S. C. Johnson & Son Professional Headquarters, Sturtevant, Wisconsin
Designer: Zimmerman Design Group with Hellmuth, Obata and Kassabaum, Inc., St. Louis, Missouri
Precast Concrete Producer: International Concrete Products, Germantown, Wisconsin

ing 1400 pieces of precast, prestressed concrete insulated wall panels and uninsulated panels totaling approximately 250,000 sq ft (23225 m^2) of precast concrete. The expected completion date of the 650,000 sq ft (60385 m^2) maximum security prison camp is spring 2002.

ACI Spring Convention Highlights

The American Concrete Institute (ACI) held its Spring Convention in San Diego, California, in March. Among the awards ceremonies and special presentations was the installation of ACI's 2000 officers.

James O. Jirsa, who is the chairman of the civil engineering department and a faculty member at the University of Texas, Austin, Texas, was elected to a one-year term as president of ACI. Dr. Jirsa replaces **Jo Coke**, ACI's first female president.

Terence C. Holland, currently working as a consultant in the private sector in Mantua, Ohio, was elected to a two-year term as vice president of ACI. He joins the incumbent vice president **Daniel L. Baker**, principal at Baker Concrete Construction, Inc., Monroe, Ohio, who completes his two-year term in 2001.

Charles W. Dolan was named the new chairman of ACI's Technical Activities Committee. Dr. Dolan is a professor of civil engineering and architectural engineering at the University of Wyoming, Laramie, Wyoming.

Among the recipients of this year's ACI awards and honors were several PCI Professional Members and active contributors to PCI.

ACI presented **Charles G. Salmon** with an honorary membership. Dr. Salmon is professor emeritus of civil engineering at the University of Wisconsin, Madison, Wisconsin.

Catherine E. French, professor of civil engineering at the University of Minnesota, Minneapolis, Minnesota, won the Arthur J. Boase Award from the Reinforced Concrete Research Council.

James R. Cagley won the Henry L. Kennedy Award. Mr. Cagley is president and principal of Cagley & Associates, Inc., Rockville, Maryland, and

is also president of the Cagley Group, which has affiliated offices in Philadelphia and Clarks Summit, Pennsylvania, and Princeton, New Jersey. He also was one of two who were presented with the Delmar L. Bloem Award for Distinguished Service.

The other recipient of the Bloem Award was **Julio A. Ramirez**, professor of engineering and assistant department head of the School of Engineering at Purdue University, West Lafayette, Indiana.

W. Gene Corley received the Alfred E. Lindau Award. Dr. Corley is senior vice president of Construction Technology Laboratories, Skokie, Illinois.

ALAN PIERCE HUDGINS (1950-2000)

Alan Pierce Hudgins, former vice president of Gate Precast Company, Monroeville, Alabama, died on March 10, 2000, in Monroeville. He was 49. Mr. Hudgins was a graduate of Auburn University, Auburn, Alabama, where he earned a Master of Science degree in civil engineering. He began his career at Lazenby Precast in 1976, and in 1984, he became one of the company's three owners. The company was sold to its present owner, Gate Petroleum Company in 1989 and renamed to Gate Precast Company. Mr. Hudgins remained on as vice president of operations and served in this capacity until 1998 when he became disabled after a lengthy struggle with cancer.

During his years at Gate Precast, he devoted himself to all aspects of production and strived to promote the use of precast concrete in the construction industry. He was a member of the American Society of Civil Engineers, Tau Beta Pi and Phi Kappa Phi. Mr. Hudgins was a tireless supporter of the American Cancer Society's "Relay for Life." He was a team member each year in the six years this event has been held, and once won a state award for the most money raised by an individual.

High Concrete Announces New Contracts, Continues Work on Other Projects

High Concrete Structures, Inc., Denver, Pennsylvania, announces three new contracts to produce precast concrete components:

- State Farm Northeast Regional Headquarters, Parsippany, New Jersey — A 122,000 sq ft (11334 m^2), one-level parking structure.
- Toys-R-Us Office Parking Garage, Montvale, New Jersey — A triangular, three-level parking deck with 260,000 sq ft (24154 m^2) of elevated precast concrete deck.
- Toys-R-Us Office Building, Montvale, New Jersey — An office building with 27,000 sq ft (2508 m^2) of architectural precast concrete wall panels.

High Concrete is currently involved in two projects. The company has produced 360 architectural panels for the Fox Chase Cancer Prevention Pavilion, part of a large medical complex in Philadelphia, Pennsylvania. Architects and owners chose precast concrete for this structure since several existing structures at the medical complex are built of precast concrete.

Matching existing structures was the reason architects chose to use architectural precast concrete for the 150,000 sq ft (13935 m^2) Penn State University's Academic Support Building on the Milton S. Hershey Medical Center campus in Hershey, Pennsylvania. High Concrete supplied 401 precast concrete spandrel column covers and wall panels totaling 40,800 sq ft (3790 m^2) of exterior finish.

Boral Material Enters Distributor Agreement

Boral Material Technologies, Inc., San Antonio, Texas, has entered a distribution agreement with FMC Corporation's Lithium Division to market and distribute lithium-based admixture products. The products are used to prevent concrete deterioration from alkali-silica reactivity.

Hanson Engineers Acquires Kenneth Balk & Associates

Hanson Engineers, Inc., Springfield, Illinois, has acquired Kenneth Balk & Associates, Land and Infrastructure Group, of St. Louis, Missouri. The Land and Infrastructure Group specializes in land and hydrographic surveying, transportation engineering, bridge and other structure design, and civil engineering. The acquisition will expand Hanson's surveying and transportation-related capabilities.

Figg Engineering Debuts Museum Display

Figg Engineering Group, Tallahassee, Florida, is sponsoring a Bridge Cart display at the National Building Museum in Washington, D. C. This educational demonstration cart examines five different types of bridges and explains how each one's design solves specific transportation problems. For more information about this display and other exhibits at the National Building Museum, contact the Museum at 401 F Street NW, Washington, D. C. 20001. Tel.: (202) 272-2448; internet: www.nbm.org.

Air Traffic Control Towers Feature Products From Universal Concrete

A new airport traffic control tower at New Jersey's Newark International Airport features over 54,000 sq ft (5017 m^2) of precast concrete pieces provided by Universal Concrete Products, Douglassville, Pennsylvania. The structural and architectural precast concrete panels lend strength and stability to the 325 ft (99.1 m) tower. Universal is also supplying structural and architectural precast concrete panels to air traffic control towers currently under construction at Orlando and Miami International Airports in Florida. Both of these towers will stand taller than the 305 ft (93 m) Statue of Liberty.

Gate Employees Receive CFA Certification

Three employees of Gate Precast Company, Monroeville, Alabama, received training and certification for Cer-

tified Field Auditor (CFA). **Joey Langham, Bill Bowyer** and **Jimmy Black** passed several examinations that were part of the four-day training program. PCI offers several CFA programs throughout the year to teach how to audit, evaluate and report precast concrete field erection activities according to PCI standards. A list of upcoming CFA programs appears in the "Calendar" section of the PCI JOURNAL.

Spancrete Machinery Readies Extruder for New Licensee

Spancrete Machinery Corporation, Waukesha, Wisconsin, plans to ship a new GT-240 Wall Panel Extruder and a bridge saw to their newest licensee, Paneles Aislantes Spancrete Espana S.A. of Barcelona, Spain. The new 7.9 ft (2.4 m) wall panel extruder will be the first in Europe and the first to meet the European CE Mark requirements for safety. The extruder will be operational July 2000 at the new Spancrete plant in Almeria, Spain.

Rendall Named Chairman of Daniel, Mann, Johnson & Mendenhall

International engineering and architecture firm, Daniel, Mann, Johnson & Mendenhall (DMJM), Los Angeles, California, named **Charles R. Rendall** as its new chairman. Mr. Rendall brings more than 30 years experience with DMJM to the chairman position. He is also DMJM's officer in charge on parent company AECOM Technology Corporation's Quality and Risk Management Program.

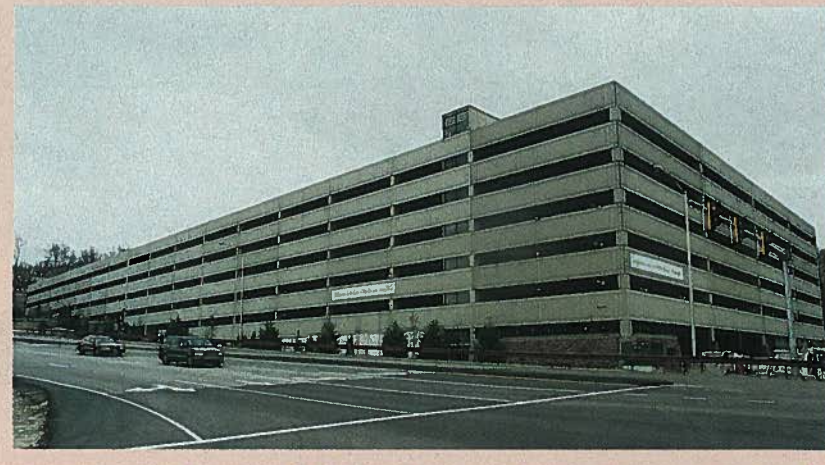
PCA Partners with FEMA

The Portland Cement Association (PCA), Skokie, Illinois, has been named National Project Impact Corporate Partner with the Federal Emergency Management Agency (FEMA). PCA will work with FEMA on concrete safe rooms, concrete homes and dam safety. The two groups will also educate people about the inherent benefits of concrete structures by enlisting the active involvement of businesses to take measures to protect their companies, employees and communities. Some of the community educational seminar topics offered by the PCA-FEMA partnership deal with choosing and building structures designed to be more resistant to disasters.

W. Gene Corley Named to National Academy of Engineers

W. Gene Corley, senior vice president of Construction Technology Laboratories, Inc., has been elected to membership in the National Academy of Engineering. Dr. Corley was honored for his continuous leadership in raising the standards of the engineering profession. Election to the National Academy of Engineers is among the highest professional distinctions accorded an engineer. He will be formally inducted into the Academy at the annual meeting in Washington, D.C., October 21-24, 2000.

Dr. Corley received his BS in civil engineering and MS and Ph.D. degrees in structural engineering from the University of Illinois, Urbana, Illinois. He holds numerous national and regional awards including the Martin Korn Award from the Precast/Prestressed Concrete Institute; the Wason Award for Research and the Alfred E. Lindau Award from the American Concrete Institute; the T.Y. Lin Award from the American Society of Civil Engineers; the Structural Engineers Association of Illinois Service Award and John Parmer Award; the University of Illinois Civil Engineering Alumni Association's Distinguished Alumnus Award; and the Henry Crown Award.



Blakeslee Prestress, Inc., Branford, Connecticut, provided precast concrete double tees, girders, spandrels and other components for this 2700 space parking structure. The parking structure is part of a casino complex, Casino of the Sky, owned by the Mohegan Indians of Uncasville, Connecticut. Engineers and designers chose precast concrete due to its speed of erection. The project was on a fast track of nine months from contract to completion because the former employee parking lot had to be torn down in preparation for the new structure.

Grace Construction Announces Donation

Grace Construction Products, Cambridge, Massachusetts, has donated more than $30,000 in products and services for the construction of the new World Center for Concrete Technology at Alpena Community College, Alpena, Michigan. The 43,000 sq ft (3995 m^2) facility, which is expected to open in August 2000, will offer educational programs and services that further enhance developments in concrete science.